

THAT WHICH IS CLAIMED:

1. An apparatus for monitoring communication network usage comprising:
a usage monitoring module operating at a network access point that captures all request packets transmitted from a plurality of network users and all response packets transmitted from a plurality of network services; wherein the usage monitoring
5 module filters the captured packets to extract usage monitoring data therefrom; and
a usage monitoring database in communication with said usage monitoring module that receives the filtered usage monitoring data from the usage monitoring module and stores the data associated with the user request packets and network response packets.
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2. The apparatus of Claim 1, further comprising a gateway device that implements the usage monitoring module, wherein the gateway device is disposed within the network at point of network traffic aggregation so that it receives all requests from a plurality of network users and receives all responses from network services.
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3. The apparatus of Claim 1, wherein the usage monitoring module filters the captured packets to extract network addresses and the usage monitoring database stores the network addresses.
- 20 4. The apparatus of Claim 3, wherein the network addresses further comprise URLs (Uniform Resource Locators).
5. The apparatus of Claim 1, wherein the usage monitoring module filters the captured packets to extract usage monitoring data comprising at least one type of data
25 chosen from the group consisting of user identification, network addresses, packet timestamp, referring network address, content-type, content length, response status code and user query string.

6. The apparatus of Claim 1, wherein the usage monitoring module performs navigational sequencing on captured packets so as to monitor a sequence of network addresses accessed by a user.

5 7. The apparatus of Claim 1, wherein the usage monitoring module performs a status code check on network service response packets to verify that a user has access to a requested network service address so that only data associated with accessible network services is stored in the usage monitoring database.

10 8. The apparatus of Claim 1, wherein the usage monitoring database further comprises a user request database that temporarily stores user request data prior to receiving a response from a requested network service.

15 9. The apparatus of Claim 1, wherein the usage monitoring database further comprises a temporary database that temporarily stores user monitoring information for network addresses that have only been accessed by a user no more than a predetermined minimum number of times.

20 10. The apparatus of Claim 9, wherein the predetermined minimum number of times is one.

25 11. The apparatus of Claim 1, wherein the usage monitoring database further comprises a designated network address database that stores network addresses that have been designated for navigational sequencing.

12. The apparatus of Claim 11, wherein the usage monitoring module is adapted to receive the network addresses that have been designated for navigational sequencing from a usage monitoring client.

13. The apparatus of Claim 11, wherein the usage monitoring module defines the network addresses that have been designated for navigational sequencing based on the frequency that a user accesses the network address.

5 14. The apparatus of Claim 1, wherein the usage monitoring database further comprises a primary database that stores the data associated with the user request packets and network response packets.

10 15. The apparatus of Claim 1, further comprising an insertion server in communication with the usage monitoring database that provides network users with targeted information based on network user usage monitoring data.

15 16. The apparatus of Claim 15, wherein the insertion server further comprises an advertisement insertion server that provides network users with targeted advertisements based on network user usage monitoring data.

20 17. The apparatus of Claim 15, wherein the insertion server further comprises a survey insertion server that provides network users with targeted surveys based on network user usage monitoring data.

25 18. A method for providing usage monitoring in a communications network, the method comprising:
capturing all data packets being transmitted from a plurality of users and a plurality of network services at a network point of access;
filtering the captured packets to provide for usage monitoring data; and
storing the usage monitoring data in a usage monitoring database.

30 19. The method of Claim 18, wherein capturing all data packets being transmitted from a plurality of users and a plurality of network services at a network point of access further comprises capturing all data packets being transmitted from a plurality of users and a plurality of network services at a gateway device.

20. The method of Claim 18, wherein filtering the captured packets to provide usage monitoring data further comprises filtering the captured packets to extract usage monitoring data comprising at least one type of data chosen from the group consisting of user identification, network addresses, packet timestamp, referring network address, content-type, content length, response status code and user query string.

21. The method of Claim 18, wherein storing the usage monitoring data in a usage monitoring database, further comprises storing the usage monitoring data in a temporary database prior to storing the usage monitoring data in a primary database.

22. A method for providing usage monitoring in a communications network, the method comprising:

capturing a transmitted data packet at a network point of access;
determining if the transmitted data packet is a user generated request data packet; and
storing the transmitted data packet in a first database if the transmitted data packet is determined to be a user generated request data packet.

23. The method of Claim 22, wherein capturing a transmitted data packet at a network point of access further comprises capturing a transmitted data packet at a network gateway device.

24. The method of Claim 22, wherein storing the transmitted data packet in a first database if the transmitted data packet is determined to be a user generated request data packet further comprises storing the transmitted data packet in a first temporary database if the transmitted data packet is determined to be a user generated request data packet.

25. The method of Claim 22, further comprising:

transferring the transmitted data packet from the first database to a second database if the transmitted data packet is matched with an accessible network service response data packet.

5 26. The method of Claim 25, wherein the second database comprises a temporary database that stores the transmitted data packet and the matched network service response data packet if a determination is made that the user has not exceeded a predetermined number of network service address accesses.

10 27. The method of Claim 25, wherein the second database comprises a primary database that stores the transmitted data packet and the matched network service response data packet if a determination is made that the user has exceeded a predetermined number of network service address accesses.

15 28. The method of Claim 22, further comprising:
 determining if the transmitted data packet exceeds a session flow limit so as to warrant storage of the first transmitted data packet in the first database.

20 29. A method for providing usage monitoring in a communications network, the method comprising:

 capturing a transmitted data packet at the network point of access, the transmitted data packet being determined to be a network service generated response packet;
 verifying user network accessibility of the second transmitted data packet;
25 matching the transmitted data packet with a user generated request data packet; and
 storing usage monitoring information from the matched transmitted data packet and user generated request data packet in a database.

30. The method of Claim 29, wherein capturing a transmitted data packet at a network point of access further comprises capturing a transmitted data packet at a network gateway device.

5 31. The method of Claim 29, wherein verifying network accessibility of the transmitted data packet further comprises checking the status code of the transmitted data packet to verify user network accessibility.

32. The method of Claim 29, wherein storing usage monitoring information
10 from the matched transmitted data packet and user generated request data packet in a database further comprises storing usage monitoring information from the matched transmitted data packet and user generated data packet in a temporary database if a determination is made that the user has not exceeded a predetermined number of network service address accesses.

15 33. The method of Claim 29, wherein storing usage monitoring information from the matched transmitted data packet and user generated request data packet in a database further comprises storing usage monitoring information from the matched transmitted data packet and user generated data packet in a primary database if a
20 determination is made that the user has exceeded a predetermined number of network service address accesses.

34. A method for navigational sequence usage monitoring in a communications network, the method comprising:
25 designating network addresses requiring navigational sequencing;
capturing, at a network point of access, a user transmitted data packet associated with a network address;
determining if the network address associated with the captured user transmitted data packet is a designated network address; and
30 storing a predetermined number of network addresses that are accessed proximate the designated network address as a navigational sequence if a determination is

made that network address associated with the captured user transmitted data packet is a designated network address.

5 35. The method of Claim 34, wherein storing a predetermined number of network addresses that are accessed proximate the designated network address as a navigational sequence further comprises storing a predetermined number of network addresses that are accessed subsequent to the access of the designated network address as a navigational sequence.

10 36. The method of Claim 34, wherein storing a predetermined number of network addresses that are accessed proximate the designated network address as a navigational sequence further comprises storing a predetermined number of network addresses that are accessed prior to the access of the designated network address as a navigational sequence.

15 37. The method of Claim 34, wherein storing a predetermined number of network addresses that are accessed proximate the designated network address as a navigational sequence further comprises storing a predetermined number of network addresses that are accessed prior to the access of the designated network address as a
20 navigational sequence.

25 38. The method of Claim 34, wherein storing a predetermined number of network addresses that are accessed proximate the designated network address as a navigational sequence further comprises storing a predetermined number of network addresses that are accessed subsequent to and prior to the access of the designated network address as a navigational sequence.

30 39. The method of Claim 34, further comprising:
 determining if the user that sent the user transmitted data packet has accessed a designated network address in a predetermined number of previous network address accesses; and

adding the network address from the user transmitted data packet to a navigational sequencing list if a determination is made that the user has accessed a designated address in the predetermined number of previous network address accesses.

5 40. The method of Claim 34, further comprising storing the designated network address in a database.

10 41. The method of Claim 34, wherein designating network addresses requiring navigational sequencing is based upon determining the most frequently accessed network addresses.

15 42. The method of Claim 34, wherein designating network addresses requiring navigational sequencing is based upon network addresses accessed a predetermined number of times.

 43. The method of Claim 34, wherein designating network addresses requiring navigational sequencing is based upon usage monitoring client selected network addresses.